

Work Loss Associated with Adult Vaccinations in Pharmacy and Healthcare Professional Office Settings in the United States

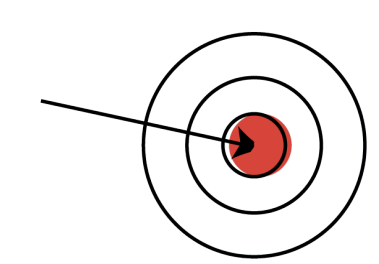
Elizabeth La¹, Carolyn Sweeney², Eric Davenport², Su Bunniran²

¹GSK, Philadelphia, PA, USA; ²RTI Health Solutions, Research Triangle Park, NC, USA

Background

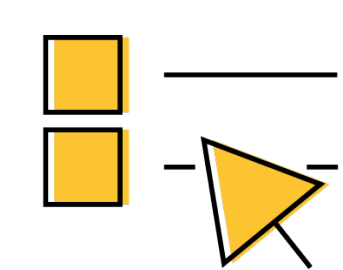
Many economic analyses of vaccines either do not include productivity losses¹ or may rely on assumptions or dated estimates for work loss associated with vaccine administration.

Objective

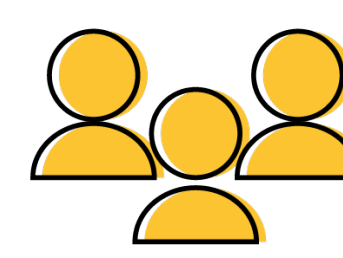


To evaluate work loss associated with vaccination among US adults recently vaccinated in pharmacies or HCP offices.

Study design



Between September–November 2023, a **cross-sectional, web-based survey** was administered to US adults who received **≥1 vaccination within the past 3 weeks**.



Survey targeted adults vaccinated in **pharmacies or HCP offices**, including **≥300 adults aged 18–49, 50–64, and ≥65 years**; soft quotas were included for race, ethnicity, and vaccination location.

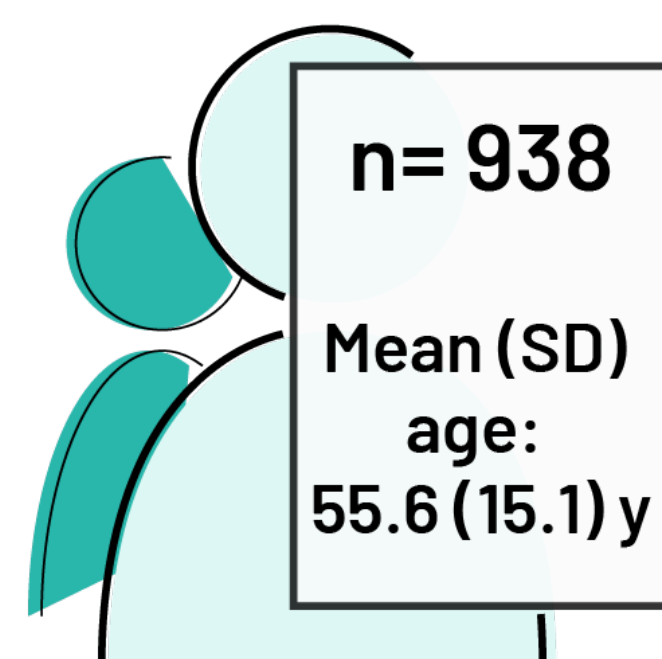


Participants recruited from online panel were required to **live in the US** and be able to **read and speak English**; HCPs or adults who received **≥4 vaccines** at their most recent vaccination visit were excluded.



Survey questions included whether **paid/unpaid time off work or time away from other unpaid productive activities** (e.g., caregiving, household activities) was needed to get vaccinated.

Survey respondents



Most recent vaccination setting:

- **Pharmacy:** 65.8% (n=618/938).
- **HCP office:** 34.1% (n=320/938).

Employment status:

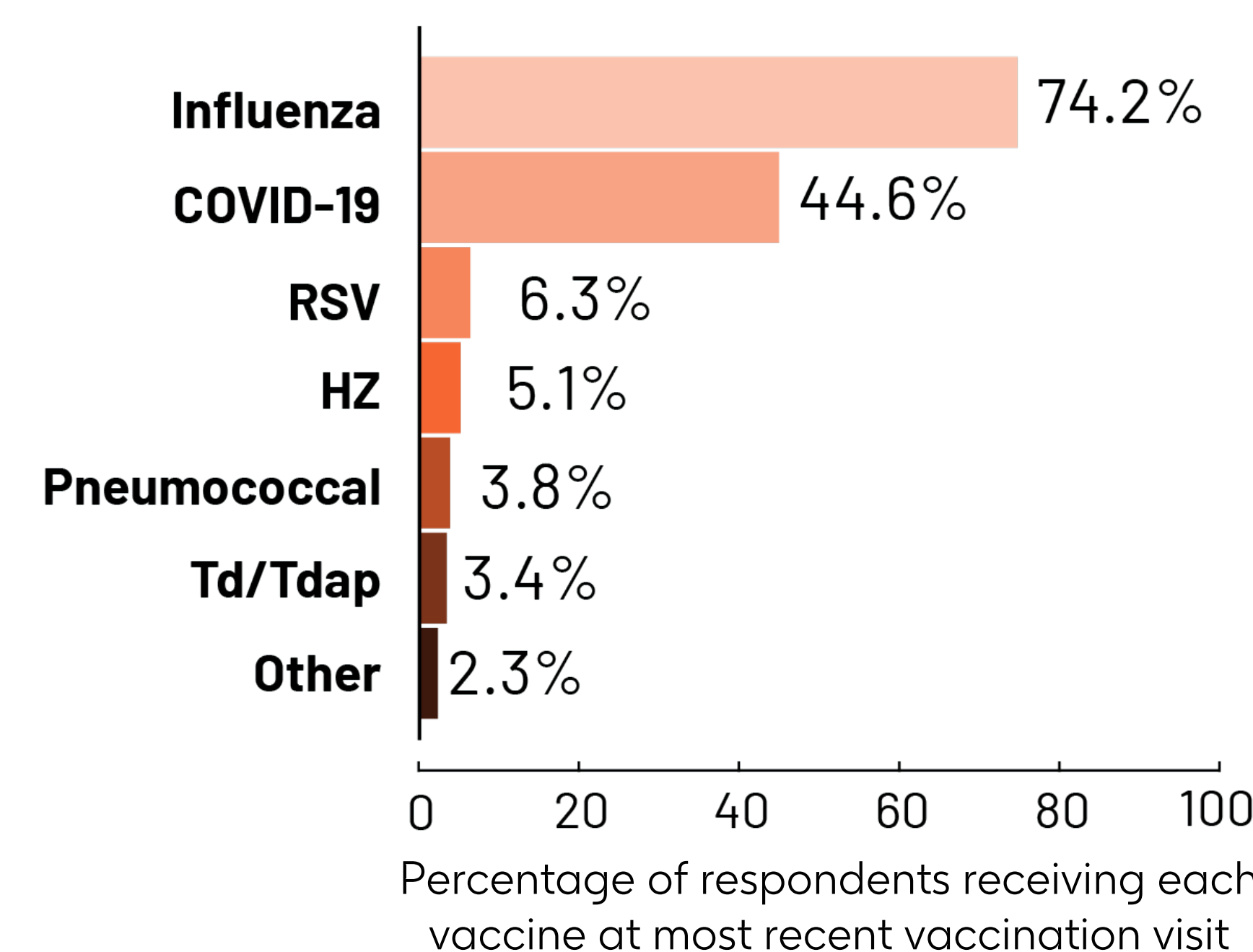
- 54.4% (n=510/938) employed, including 18.6% of respondents aged ≥65 years (n=59/318).

Scan QR code for additional details

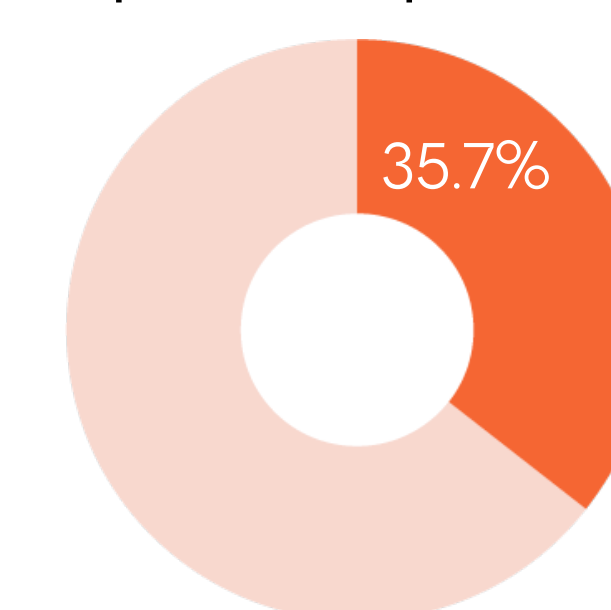
Results

Characteristics of most recent vaccination visit

- Most adults (80.6%; n=756/938) received an **influenza or COVID-19 vaccine** at their most recent vaccination visit.



- **Vaccine coadministrations** were commonly reported, particularly in pharmacy settings.



- Adults receiving **≥1 vaccine**:
Overall: 35.7% (n=335/938)
Pharmacies: 43.2% (n=267/618)
HCP offices: 21.3% (n=68/320)

Note: 4.1% of respondents (n=38/938) received 3 vaccines at their most recent visit.

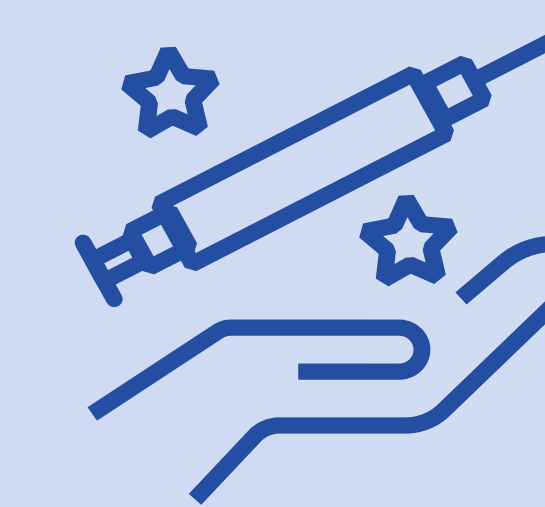
- Among those with a coadministration, most received:
 - Influenza + COVID-19 (64.2%; n=215/335)
 - Influenza + COVID-19 + RSV (5.4%; n=18/335)
 - Influenza + RSV (4.8%; n=16/335)
 - Influenza + pneumococcal disease (4.8%; n=16/335)

Productivity losses associated with most recent vaccination visit

Outcome	All locations			
	Overall	18–49 years	50–64 years	≥65 years
Work loss associated with most recent vaccination visit				
Among all respondents	N=938	N=316	N=304	N=318
Took paid/unpaid time off work to get vaccinated, n (%)	76 (8.1%)	47 (14.9%)	22 (7.2%)	7 (2.2%)
Mean (SD) paid/unpaid time off work to get vaccinated among all respondents, in minutes	15.6 (69.9)	29.8 (98.3)	15.4 (66.9)	1.8 (13.4)
Among employed respondents ^a	N=510	N=258	N=193	N=59
Took paid/unpaid time off work to get vaccinated, n (%)	74 (14.5%)	46 (17.8%)	22 (11.4%)	6 (10.2%)
Mean (SD) paid/unpaid time off work to get vaccinated among all employed respondents, in minutes	27.7 (90.7)	34.7 (104.0)	24.2 (82.8)	8.7 (29.2)
Other productivity loss associated with most recent vaccination visit				
Among all respondents	N=938	N=316	N=304	N=318
Took time away from other unpaid productive activities to get vaccinated, n (%)	197 (21.0%)	81 (25.6%)	73 (24.0%)	43 (13.5%)
Mean (SD) time away from other unpaid productive activities to get vaccinated among all respondents, in minutes ^a	25.3 (96.8)	34.6 (126.5)	26 (66.0)	15.3 (86.2)

^a Employed respondents included those who reported being employed full time, being employed part time, or being self-employed.

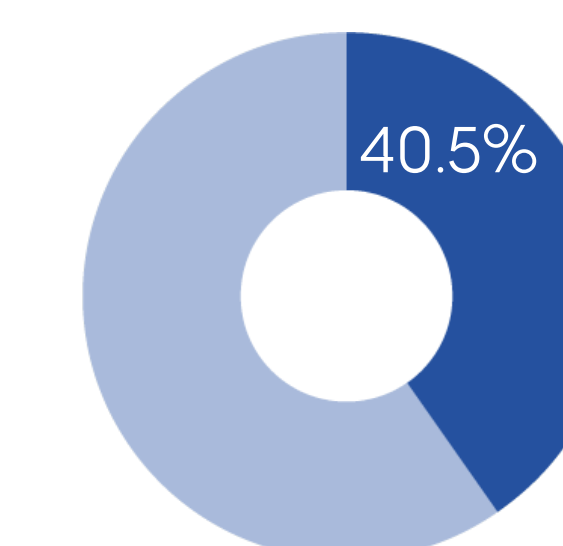
Conclusions



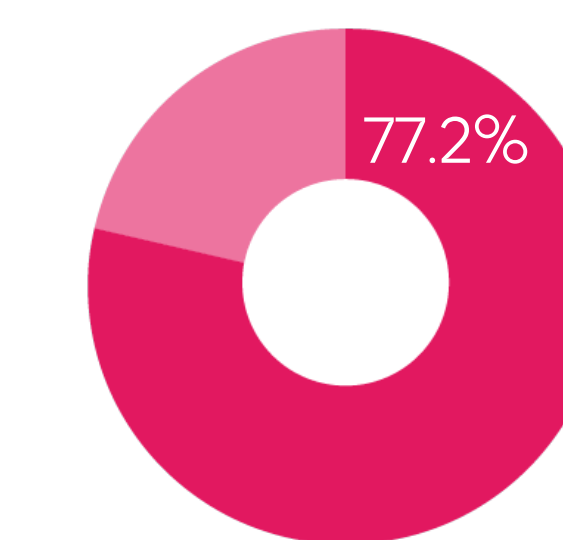
Adult vaccinations were associated with limited productivity losses, which has important implications for analyses on the value of vaccines.

- Most vaccination visits (85.4%; n=801/938) occurred during **typical office hours** (Monday–Friday, 8am–5pm).

- Vaccination visits frequently involved **other activities**:



- Among those vaccinated in **pharmacies, 40.5%** (n=250/618) also picked up a prescription and/or shopped.



- Among those vaccinated in **HCP offices, 77.2%** (n=247/320) went to the HCP office for reasons other than vaccination.

- Only **8.1%** of all respondents (n=76/938; 14.5% of employed respondents [n=74/510]) took **paid/unpaid time off work** to get vaccinated.

- Percentages taking paid/unpaid time off work to get vaccinated **were lower among older respondents and ranged by location:**

Pharmacies: 5.5% (n=34/618)
HCP offices: 13.1% (n=42/320)

- Among all respondents, **mean (SD) paid/unpaid time off work to get vaccinated was 15.6 (69.9) minutes**.

- **21.0%** of respondents (n=197/938) took time away from other **unpaid productive activities** to get vaccinated.

- Among all respondents, **mean (SD) time away from other unpaid productive activities was 25.3 (96.8) minutes**.

Abbreviations

HCP: healthcare professional; HZ: herpes zoster; RSV: respiratory syncytial virus; SD: standard deviation; US: United States; y: years.

Reference

1. Silver MC, et al. Vaccine. 2021;39(46):6727–6734.

Acknowledgements

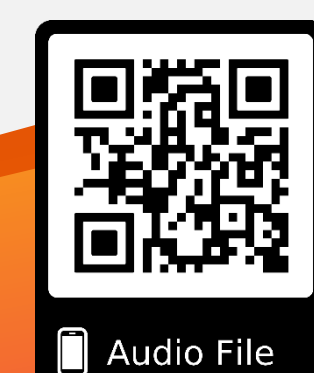
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Disclosures

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Digital poster
Supplemental data
Narrated summary



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Supplement

Survey respondent characteristics

Characteristic	Total (N=938)	Pharmacy (N=618)	HCP office (N=320)
Mean (SD) weeks since most recent vaccination visit	1.4 (0.9)	1.4 (0.9)	1.5 (0.9)
Mean (SD) age, in years	55.6 (15.1)	56.0 (15.2)	54.8 (15.1)
Gender, n (%) ^a			
Female	587 (62.6%)	376 (60.8%)	211 (65.9%)
Male	345 (36.8%)	238 (38.5%)	107 (33.4%)
Race and ethnicity, n (%) ^b			
White	711 (75.8%)	486 (78.6%)	225 (70.3%)
African American or Black	133 (14.2%)	77 (12.5%)	56 (17.5%)
Hispanic, Latina/Latino, Latine, or Latinx	71 (7.6%)	40 (6.5%)	31 (9.7%)
Asian or Asian American	47 (5.0%)	32 (5.2%)	15 (4.7%)
US Census Region, n (%)			
Midwest	199 (21.2%)	130 (21.0%)	69 (21.6%)
Northeast	258 (27.5%)	172 (27.8%)	86 (26.9%)
South	319 (34.0%)	215 (34.8%)	104 (32.5%)
West	162 (17.3%)	101 (16.3%)	61 (19.1%)
Urban/rural, n (%)			
Urban	286 (30.5%)	186 (30.1%)	100 (31.3%)
Suburban	535 (57.0%)	353 (57.1%)	182 (56.9%)
Rural	117 (12.5%)	79 (12.8%)	38 (11.9%)
Employment status, n (%) ^c			
Employed	510 (54.4%)	342 (55.3%)	168 (52.5%)
Not employed	82 (8.7%)	44 (7.1%)	38 (11.9%)
Retired	335 (35.7%)	223 (36.1%)	112 (35.0%)
Health status, n (%)			
Excellent	92 (9.8%)	69 (11.2%)	23 (7.2%)
Very good	323 (34.4%)	230 (37.2%)	93 (29.1%)
Good	346 (36.9%)	227 (36.7%)	119 (37.2%)
Fair	153 (16.3%)	83 (13.4%)	70 (21.9%)
Poor	24 (2.6%)	9 (1.5%)	15 (4.7%)

^a Other gender identities (e.g., gender fluid, nonbinary) were reported by 0.6% of respondents.
^b Respondents were asked to select all that apply. Other race and ethnicity responses included "Alaska Native, American Indian, or Native American" (n=11), "Middle Eastern and/or North African" (n=3), "Native Hawaiian and/or Pacific Islander" (n=1), and "A race or ethnicity not listed" (n=7).
^c A total of 11 respondents (1.2%) preferred to not provide their employment status.

Other activities at most recent vaccination visit

Outcome	All locations				Pharmacy				HCP office			
	Overall (N=938)	18-49 years (N=316)	50-64 years (N=304)	≥65 years (N=318)	Overall (N=618)	18-49 years (N=202)	50-64 years (N=200)	≥65 years (N=216)	Overall (N=320)	18-49 years (N=114)	50-64 years (N=104)	≥65 years (N=102)
Other activities during vaccination visit among pharmacy respondents, n (%)												
Picking up a prescription only	N/A	N/A	N/A	N/A	41 (6.6%)	8 (4.0%)	14 (7.0%)	19 (8.8%)	N/A	N/A	N/A	N/A
Shopping for items only	N/A	N/A	N/A	N/A	158 (25.6%)	50 (24.8%)	47 (23.5%)	61 (28.2%)	N/A	N/A	N/A	N/A
Picking up a prescription and shopping for items	N/A	N/A	N/A	N/A	51 (8.3%)	26 (12.9%)	14 (7.0%)	11 (5.1%)	N/A	N/A	N/A	N/A
Not picking up a prescription or shopping for items	N/A	N/A	N/A	N/A	368 (59.5%)	118 (58.4%)	125 (62.5%)	125 (57.9%)	N/A	N/A	N/A	N/A
Main reason for vaccination visit among HCP office respondents, n (%)												
To receive a vaccination	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	73 (22.8%)	16 (14.0%)	32 (30.8%)	25 (24.5%)
A routine checkup/follow-up visit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	205 (64.1%)	81 (71.1%)	63 (60.6%)	61 (59.8%)
Urgent medical care	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10 (3.1%)	3 (2.6%)	3 (2.9%)	4 (3.9%)
To get bloodwork or other lab work done	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20 (6.3%)	10 (8.8%)	2 (1.9%)	8 (7.8%)
Other	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12 (3.8%)	4 (3.5%)	4 (3.8%)	4 (3.9%)
Other activities reported at most recent vaccination visit, n (%) ^a												
Yes	497 (53.0%)	182 (57.6%)	147 (48.4%)	168 (52.8%)	250 (40.5%)	84 (41.6%)	75 (37.5%)	91 (42.1%)	247 (77.2%)	98 (86.0%)	72 (69.2%)	77 (75.5%)
No	441 (47.0%)	134 (42.4%)	157 (51.6%)	150 (47.2%)	368 (59.5%)	118 (58.4%)	125 (62.5%)	125 (57.9%)	73 (22.8%)	16 (14.0%)	32 (30.8%)	25 (24.5%)

^a Other activities are based on pharmacy respondents reporting also picking up a prescription and/or shopping for items during their most recent vaccination visit and HCP office respondents reporting going to the HCP office for a main reason other than vaccination during their most recent vaccination visit.

Abbreviations

HCP: healthcare professional; N: number;
N/A: not applicable; SD: standard deviation;
US: United States.

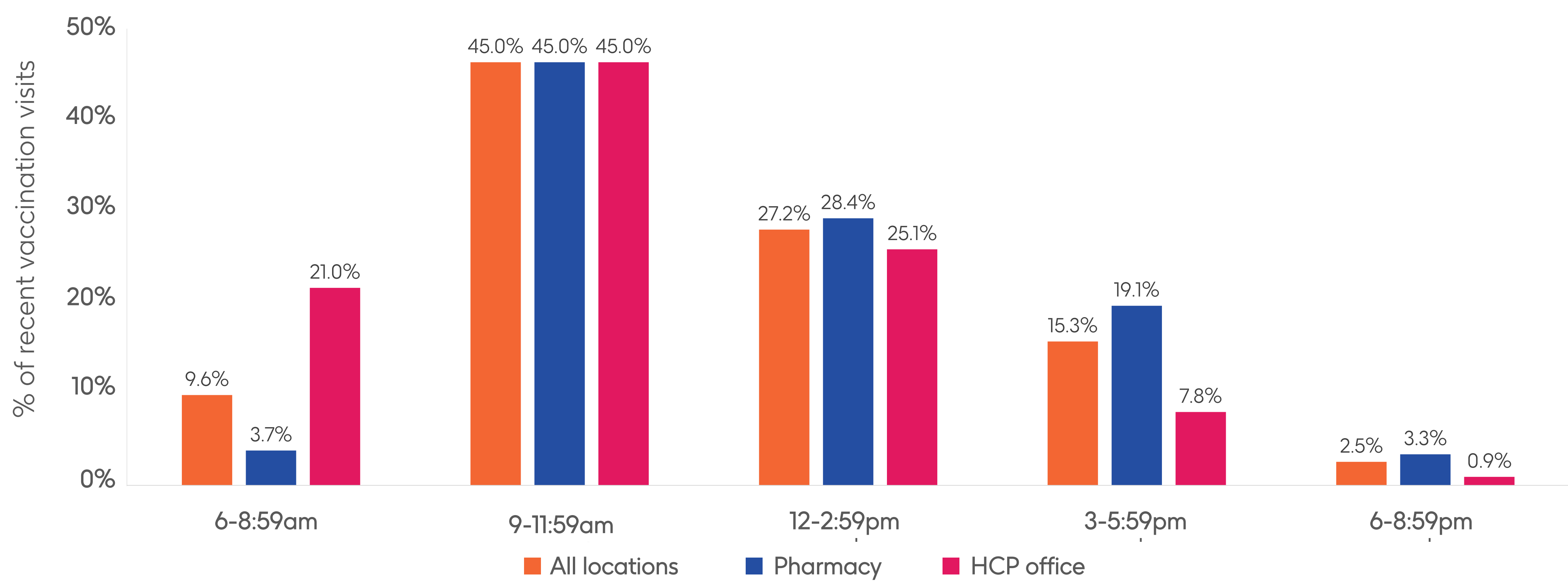
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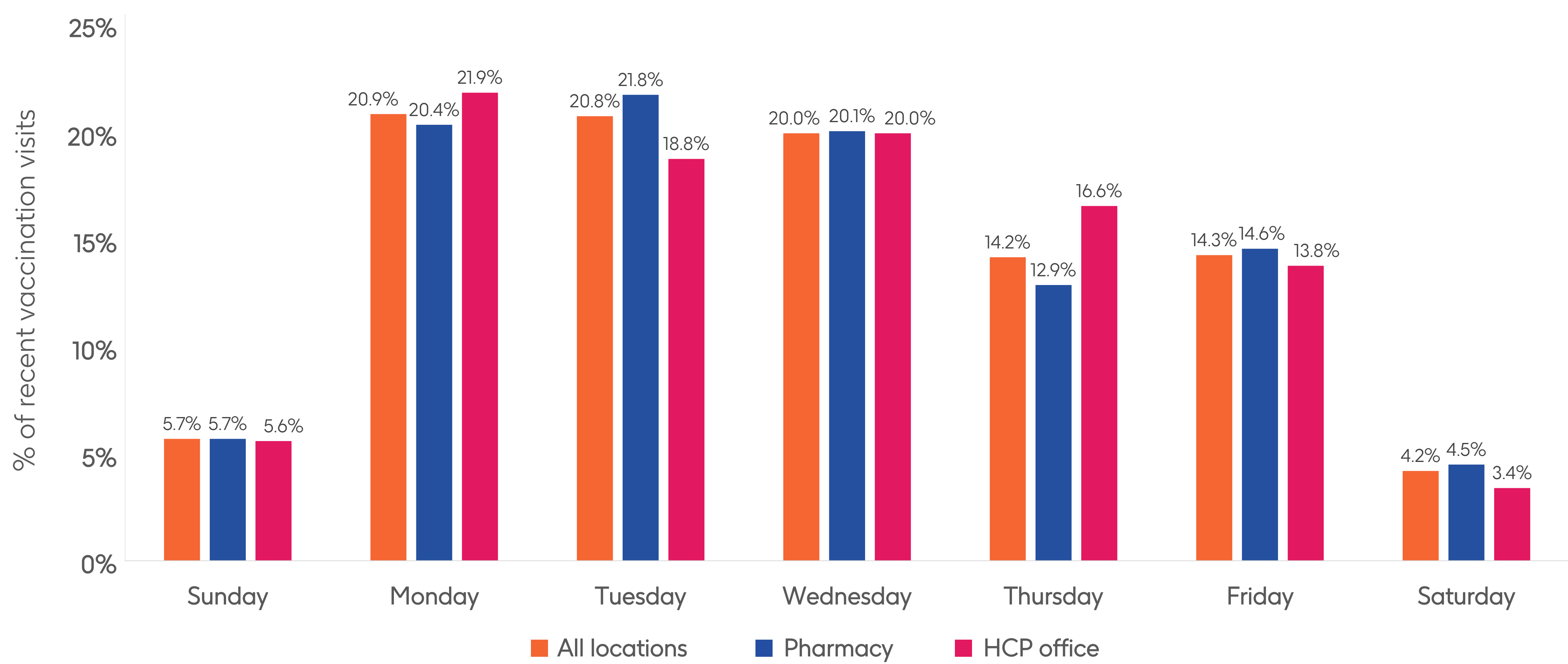
¹GSK, Philadelphia, PA, USA; ²RTI Health Solutions, Research Triangle Park, NC, USA

Supplement

Timing of most recent vaccination visit, overall and by vaccination location



Note: 5 respondents reported getting vaccinated between 9pm-5:59am.



Time spent at most recent vaccination visit^a

Outcome	All locations				Pharmacy				HCP office			
	Overall	18-49 years	50-64 years	≥65 years	Overall	18-49 years	50-64 years	≥65 years	Overall	18-49 years	50-64 years	≥65 years
Among all respondents	N=924	N=312	N=301	N=311	N=605	N=198	N=197	N=210	N=319	N=114	N=104	N=101
Mean (SD) total time spent getting vaccinated, in minutes	87.0 (59.3)	92.7 (66.4)	92.2 (64.9)	76.2 (42.6)	71 (44.6)	73.4 (53.2)	74 (44.4)	65.8 (34.5)	117.4 (70.9)	126.3 (73.4)	126.6 (81.8)	97.8 (49.3)
Mean (SD) total travel time to/from vaccination visit, in minutes	48.5 (45.9)	51.4 (50.9)	52.1 (51.3)	42 (32.9)	39.8 (36.0)	41.5 (39.7)	41.8 (39.7)	36.3 (27.6)	64.9 (57.0)	68.5 (62.6)	71.7 (63.7)	53.9 (39.3)
Mean (SD) time at vaccination visit, in minutes	38.5 (27.3)	41.4 (30.5)	40.1 (29.0)	34.2 (21.1)	31.2 (18.7)	31.9 (21.4)	32.2 (18.2)	29.5 (16.2)	52.5 (34.6)	57.8 (36.4)	55 (38.3)	44 (26.2)
Among respondents without any other activities reported at most recent vaccination visit ^b	N=438	N=133	N=155	N=150	N=365	N=117	N=123	N=125	N=73	N=16	N=32	N=25
Mean (SD) total time spent getting vaccinated, in minutes	67.7 (37.1)	69.2 (41.3)	70.7 (36.7)	63.2 (33.1)	64.3 (34.6)	64.8 (35.4)	65.7 (35.4)	62.5 (33.2)	84.7 (44.1)	101.9 (63.8)	90 (35.8)	66.9 (32.7)
Mean (SD) total travel time to/from vaccination visit, in minutes	37.5 (29.2)	38 (30.3)	39.9 (31.4)	34.7 (25.4)	34.9 (27.9)	36.3 (28.8)	35 (29.5)	33.7 (25.6)	50.5 (31.7)	50.9 (38.4)	58.8 (31.8)	39.8 (24.1)
Mean (SD) time at vaccination visit, in minutes	30.2 (18.3)	31.2 (21.6)	30.8 (17.6)	28.5 (15.7)	29.4 (16.0)	28.5 (15.5)	30.7 (17.7)	28.8 (14.8)	34.2 (26.9)	51.1 (42.1)	31.2 (17.7)	27.1 (20.1)

^a A total of 14 observations were excluded from the analysis because total time spent getting vaccinated was reported as ≤0 hours or ≥10 hours.

^b Other activities are based on pharmacy respondents reporting also picking up a prescription and/or shopping for items during their most recent vaccination visit and HCP office respondents reporting going to the HCP office for a main reason other than vaccination during their most recent vaccination visit.

Abbreviations

HCP: healthcare professional; N: number; SD: standard deviation.

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Work loss associated with most recent vaccination visit

Outcome	All locations				Pharmacy				HCP office			
	Overall	18-49 years	50-64 years	≥65 years	Overall	18-49 years	50-64 years	≥65 years	Overall	18-49 years	50-64 years	≥65 years
Among all respondents	N=938	N=316	N=304	N=318	N=618	N=202	N=200	N=216	N=320	N=114	N=104	N=102
Took paid/unpaid time off work to get vaccinated, n (%)	76 (8.1%)	47 (14.9%)	22 (7.2%)	7 (2.2%)	34 (5.5%)	21 (10.4%)	8 (4.0%)	5 (2.3%)	42 (13.1%)	26 (22.8%)	14 (13.5%)	2 (2.0%)
Mean (SD) paid/unpaid time off work to get vaccinated among all respondents, in minutes	15.6 (69.9)	29.8 (98.3)	15.4 (66.9)	1.8 (13.4)	8.8 (55.6)	18.1 (82.0)	7.3 (50.0)	1.5 (10.7)	28.8 (90.1)	50.6 (119.4)	30.9 (89.3)	2.5 (17.8)
Among employed respondents ^a	N=510	N=258	N=193	N=59	N=342	N=169	N=129	N=44	N=168	N=89	N=64	N=15
Took paid/unpaid time off work to get vaccinated, n (%)	74 (14.5%)	46 (17.8%)	22 (11.4%)	6 (10.2%)	32 (9.4%)	20 (11.8%)	8 (6.2%)	4 (9.1%)	42 (25.0%)	26 (29.2%)	14 (21.9%)	2 (13.3%)
Mean (SD) paid/unpaid time off work to get vaccinated among all employed respondents, in minutes	27.7 (90.7)	34.7 (104.0)	24.2 (82.8)	8.7 (29.2)	14.3 (69.5)	18.8 (82.0)	11.3 (62.0)	5.9 (21.5)	54.9 (118.6)	64.8 (131.9)	50.2 (109.7)	17 (45.0)

^a Employed respondents included those who reported being employed full time, being employed part time, or being self-employed.

Other unpaid productive time loss (e.g., household activities, caregiving) associated with most recent vaccination visit

Outcome	All locations				Pharmacy				HCP office			
	Overall	18-49 years	50-64 years	≥65 years	Overall	18-49 years	50-64 years	≥65 years	Overall	18-49 years	50-64 years	≥65 years
Among all respondents	N=938	N=316	N=304	N=318	N=618	N=202	N=200	N=216	N=320	N=114	N=104	N=102
Took time away from other unpaid productive activities to get vaccinated, n (%)	197 (21.0%)	81 (25.6%)	73 (24.0%)	43 (13.5%)	127 (20.6%)	51 (25.2%)	46 (23.0%)	30 (13.9%)	70 (21.9%)	30 (26.3%)	27 (26.0%)	13 (12.7%)
Mean (SD) time away from other unpaid productive activities to get vaccinated among all respondents, in minutes ^a	25.3 (96.8)	34.6 (126.5)	26 (66.0)	15.3 (86.2)	22.8 (94.6)	34.4 (147.3)	23.2 (66.0)	11.5 (33.1)	30.1 (100.9)	35 (77.5)	31.2 (66.1)	23.4 (144.6)
Among respondents without any other activities reported at most recent vaccination visit ^b	N=441	N=134	N=157	N=150	N=368	N=118	N=125	N=125	N=73	N=16	N=32	N=25
Took time away from other unpaid productive activities to get vaccinated, n (%)	89 (20.2%)	28 (20.9%)	34 (21.7%)	27 (18.0%)	69 (18.8%)	24 (20.3%)	23 (18.4%)	22 (17.6%)	20 (27.4%)	4 (25.0%)	11 (34.4%)	5 (20.0%)
Mean (SD) time away from other unpaid productive activities to get vaccinated among all respondents without any other activities reported at most recent vaccination visit, in minutes	21.8 (85.2)	16.8 (39.1)	22.5 (68.5)	25.4 (122.9)	17.5 (53.0)	16.6 (39.7)	19.8 (72.2)	16 (40.0)	43.4 (171.6)	18.8 (35.2)	33.1 (51.5)	72.2 (287.6)

^a In a sensitivity analysis, values for time away from other unpaid productive activities to get vaccinated were imputed, assuming maximum values for each respondent corresponding to their total time getting vaccinated (including total travel time and time at vaccination visit location). In this sensitivity analysis, the mean (SD) time away from other unpaid productive activities was 16.2 (37.7) minutes overall.

^b Other activities are based on pharmacy respondents reporting also picking up a prescription and/or shopping for items during their most recent vaccination visit and HCP office respondents reporting going to the HCP office for a main reason other than vaccination during their most recent vaccination visit.

- Most respondents **drove themselves** to their vaccination visit (77.1% [n=723/938]), with 9.7% (n=91/938) being driven by someone else.
 - Among respondents who reported being driven by someone else, only 8.8% (n=8/91; or 0.9% of all respondents [n=8/938]) reported that the other person needed to take time off work.
 - The remaining 86.8% (n=79/91) reported that the other person did not need to take time off work and 4.4% (n=4/91) were unsure.

Abbreviations

HCP: healthcare professional; N: number; SD: standard deviation.